REMARKS:

In the Specification

The title has been amended to reflect the claimed invention.

Claims 3-10

Claims 3-10 have been rejected under 35 USC 112, second paragraph as being indefinite. Claims 3-4 have been amended to recite that the term "dR" refers to the signal. Claims 5-7 have been amended to recite that the term "Hce" refers to the easy axis coercivity. Claims 8-9 have been amended to recite that the term "Hch" refers to a hard axis coercivity. While these terms are believed to be well known in the art, they have nonetheless been further defined in the claims.

Claims 1-12 and 16

Claims 1-12 and 16 have been rejected under 35 USC 103(a) as being unpatenable over Ishiwata (US6754051). The rejection indicates that Ishiwata fails to disclose an antiparallel pinned layer structure, but that an antiparallel configuration is required for a spin valve.

Applicants respectfully disagree that an antiparallel configuration is required for a spin valve. Particularly, for a basic spin valve sensor, the resistance varies as a function of the spin-dependent transmission of the conduction electrons between two ferromagnetic layers separated by a spacer layer, and the accompanying spin-dependent scattering which takes place at the interface of the ferromagnetic and non-magnetic layers and within the ferromagnetic layers. The resistance of these sensors depends on the relative orientation of the magnetization of the different magnetic layers. Typically, the magnetic orientations of the two ferromagnetic layers are orthogonal rather than antiparallel.

Further, Ishiwata itself discloses a spin valve transducer (4) in FIGS. 2A and 2B. Applicants assume that Ishiwata's spin valve sensor structure is functional as disclosed,

even without an antiparallel pinned layer structure as required by claim 1. It seems that the only way to reconcile the rejection with Ishiwata's disclosure is to assert that Ishiwata would be nonfunctional because it lacks an antiparallel pinned layer.

Accordingly, claim 1 is believed to be allowable over Ishiwata. Reconsideration and allowance of claim 1 is respectfully requested.

Claims 2-12 depend from claim 1, particularly as amended, and therefore are also believed to be allowable over Ishiwata due to their dependency.

Additionally, claim 2 requires two antiparallel pinned layers in the AP pinned layer structure. No analogy to Ishiwata can be drawn.

Claim 16 contains limitations similar to that of claim 1, and is therefore believed to be allowable over Ishiwata for the same reasons.

Double Patenting Rejection

Applicants respectfully disagree with the obviousness type double patenting rejection based on claims 25-46 of Chau et al. (US6437950) because the claims of that patent do not require a PtMn layer formed by ion beam deposition. Conversely, claims 25-46 of Chau require an IrMn layer, which is not present in the present claims. Thus, the claims of the present application are clearly distinguishable from Chau.

Withdrawal of the double patenting rejection is respectfully requested.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 971-2573. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 50-2587 (Order No. JP920000049US2).

Respectfully submitted,

By: _____ Date: 8/2/05

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